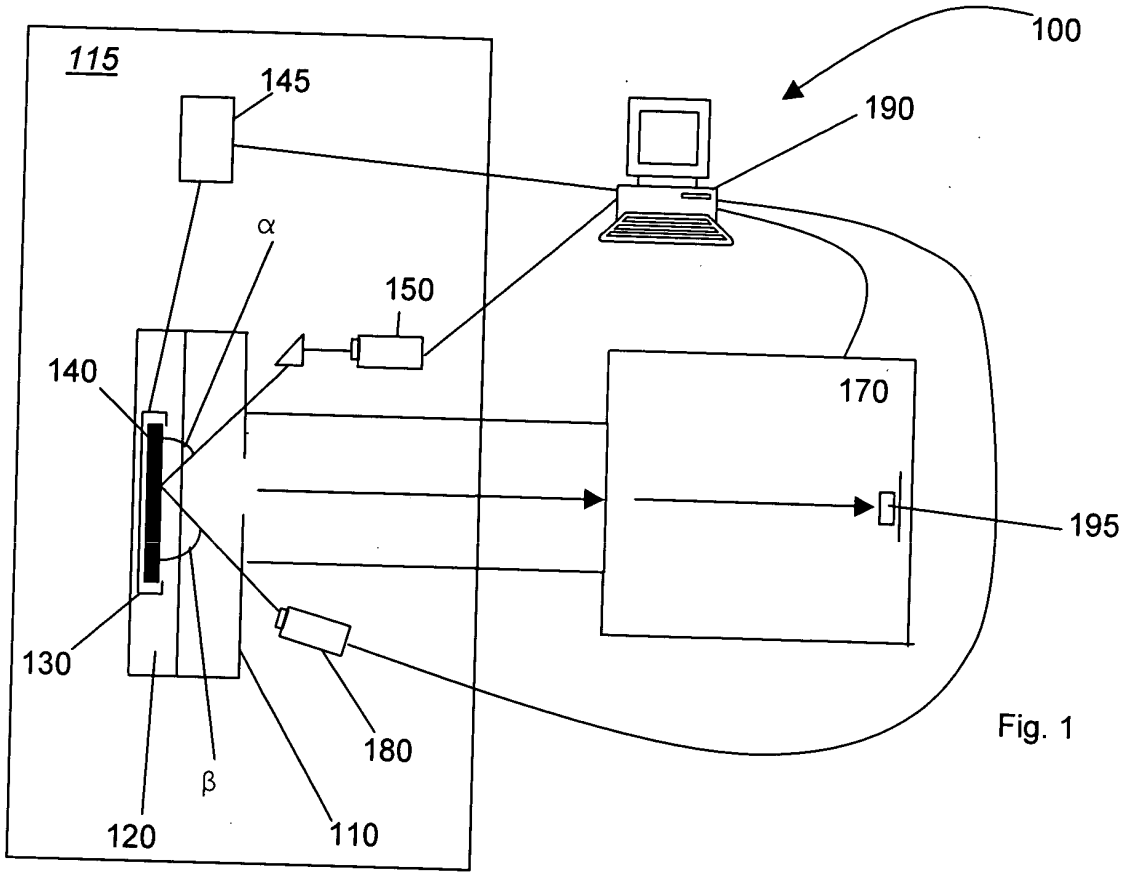
115
145
100
190
α
150
140
170
195
130
180
β
120
110

Fig. 1

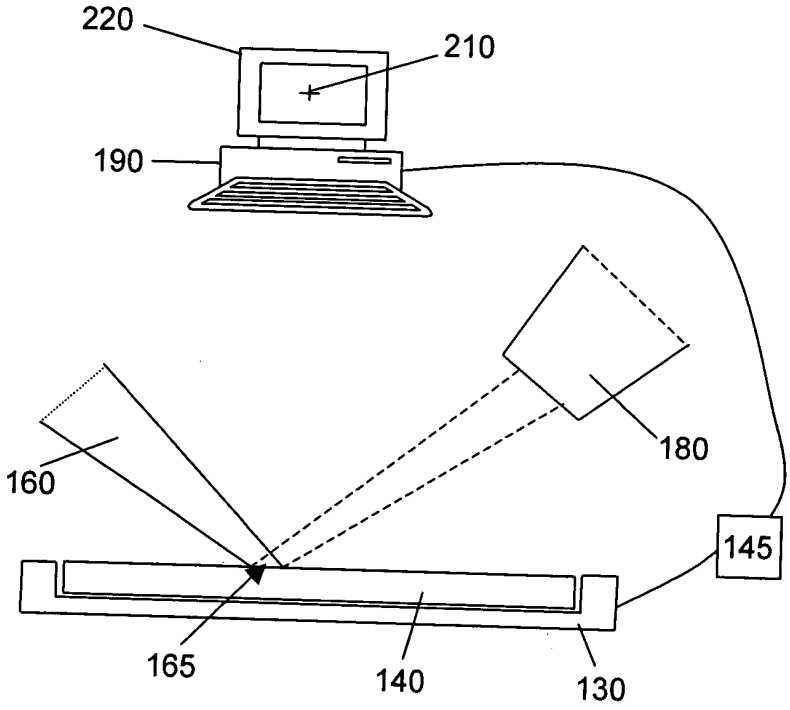
220
210
190
160
180
145
165
140
130

Fig. 2

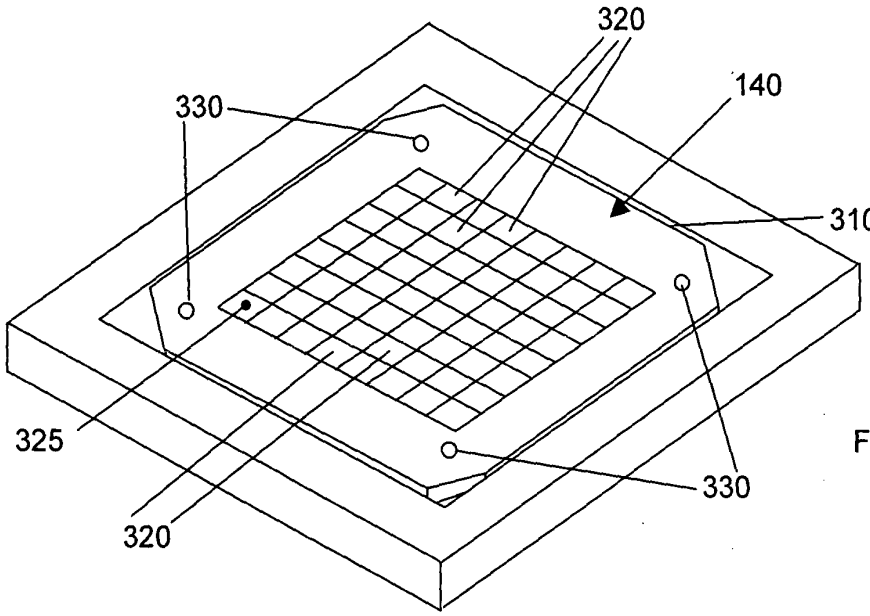

Fig. 3

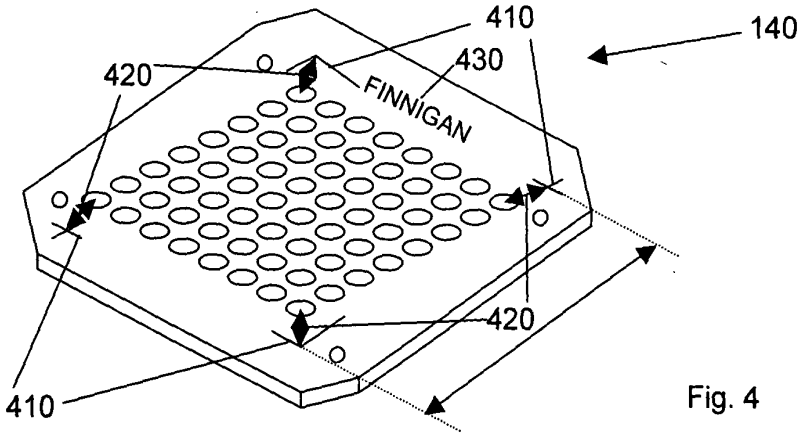

Fig. 4

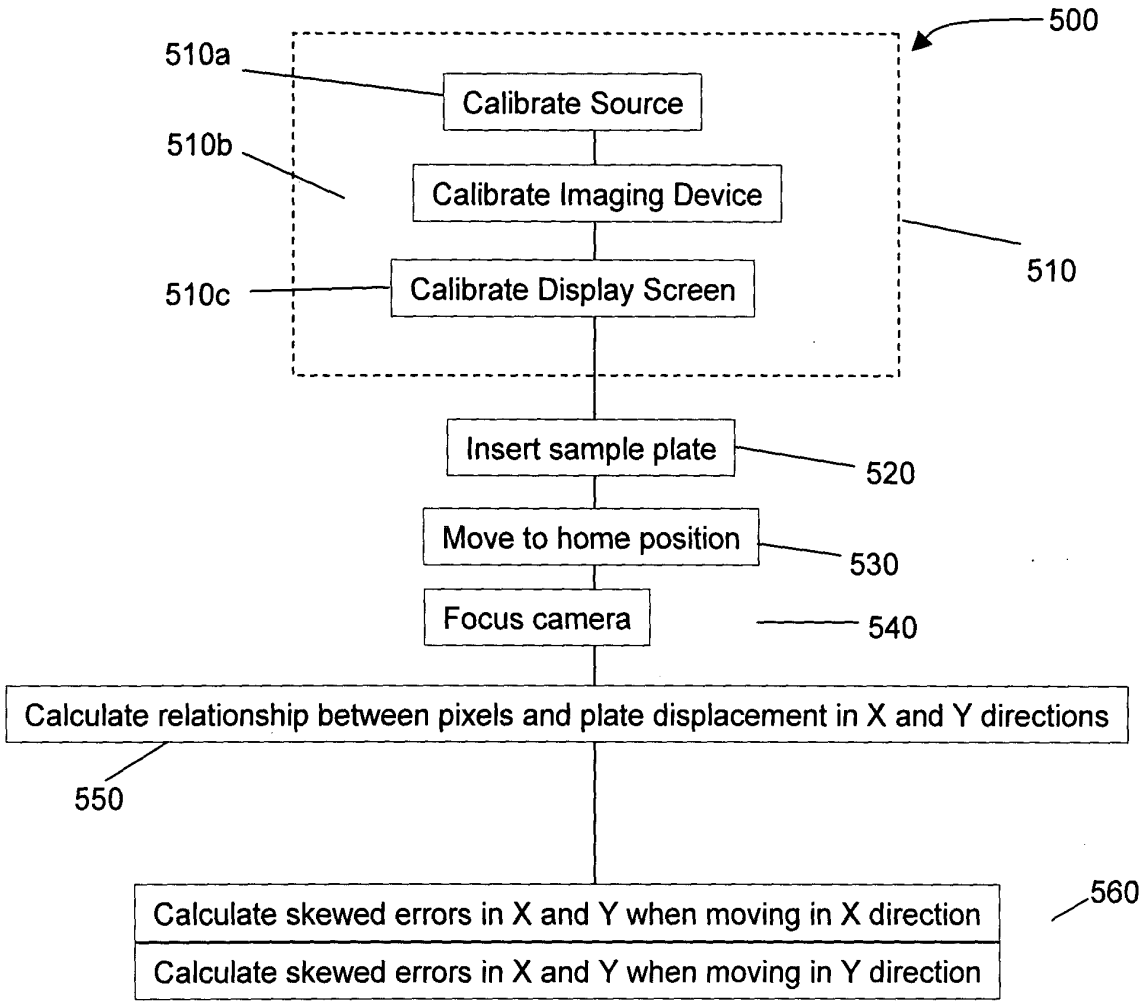
500
510a
Calibrate Source
510b
Calibrate Imaging Device
510
510c
Calibrate Display Screen
Insert sample plate
520
Move to home position
530
Focus camera
540
Calculate relationship between pixels and plate displacement in X and Y directions
550
Calculate skewed errors in X and Y when moving in X direction
560
Calculate skewed errors in X and Y when moving in Y direction

Fig. 5

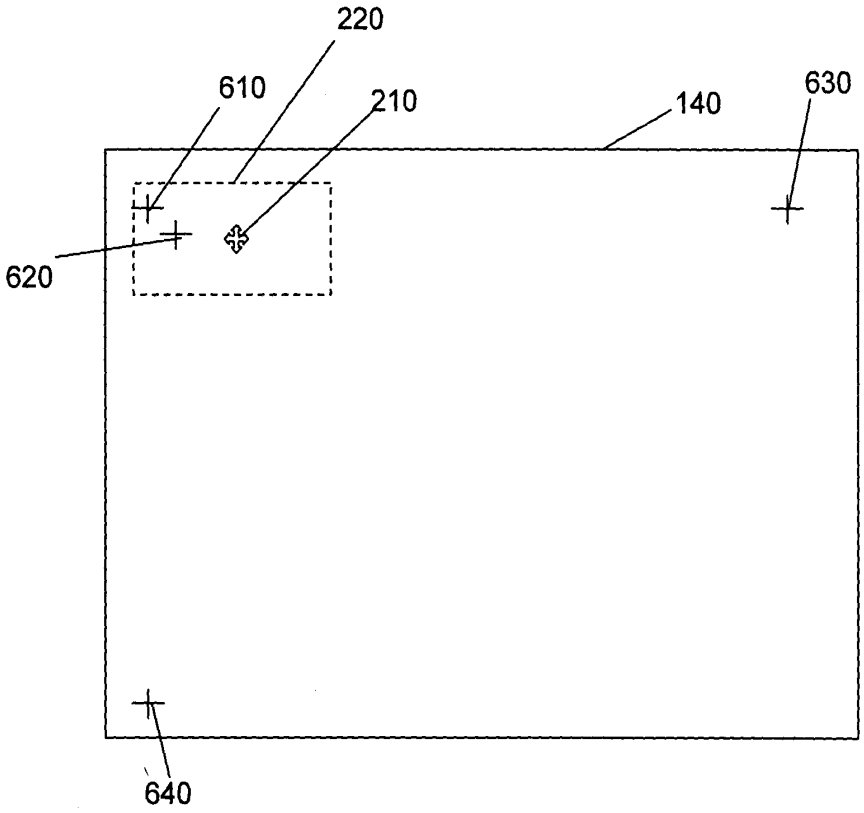
220
610
210
140
630
620
640

Fig. 6a

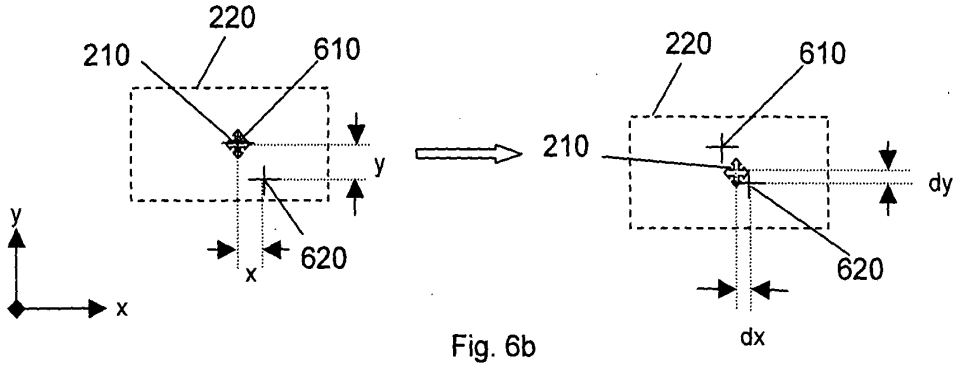
220
210
610
y
620
x
y
x
220
610
210
dy
620
dx

Fig. 6b

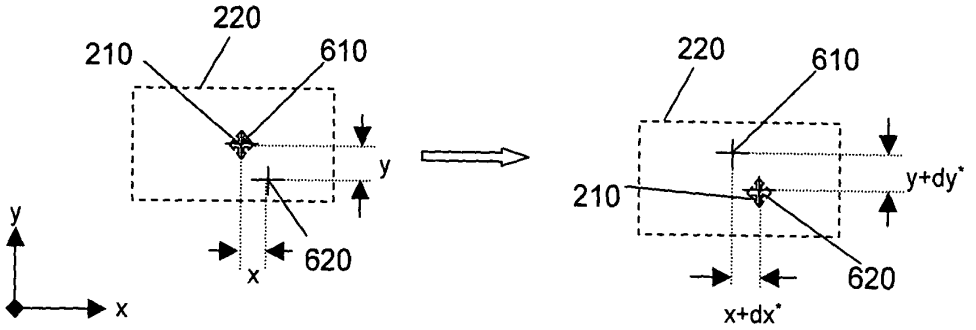

Fig. 6c

* Coordinate indicated on robotic mechanism

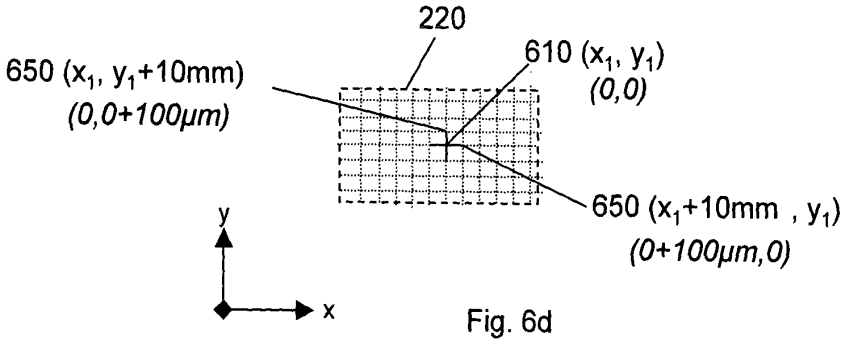

Fig. 6d

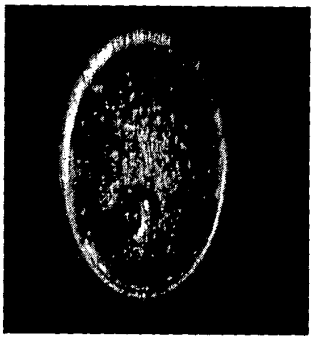

Fig. 7a

Fig. 7b